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ABSTRACT

Reducing the dropout rate of Mississippi's public education system from its national high of 42 percent of all students in any potential graduating class to the national average of 10 percent of the class cohort would result in substantial economic benefits to the state far outweighing the related costs, according to this analysis of relevant statistics. Assuming that students who dropped out of school had instead graduated and then obtained employment at pay rates equivalent to those of actual high school graduates, the research uses census and school statistics to develop a very conservative estimate that reducing the dropout rate could eventually increase state revenues by $225 million or more each year. Tables detail dropout rates, relative earning power at different educational levels for individuals and for student cohorts, potential productivity rates at different dropout levels, and potential tax revenue increases. (PGD)

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An Economic Case for a Compulsory School Attendance Law: A Look at the Class of 1980-81

by

Richard Blackbourn
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A Report
Commissioned by the PREPS Advisory Council

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There are many reasons why Mississippi's system of public education should be improved. Given that Mississippi has consistently finished last in most all economic comparisions among the states, an improved economic status must lead the list. Many economic projections concerning the impact of an improved system of public education have dealt with an endless list of assumptions. This report will only look at the impact of reducing the dropout rate and will assume that the only benefit economically will be increases in sales and income taxes due to higher wages earned by graduates.

The last few sessions of the Mississippi Legislature have seen interesting debates concerning whether Mississippi, with the highest "dropout" rate in the nation, could benefit from a strong compulsory attendance law. Compulsory attendance has been one of those issues which never passes; however, one is hard pressed to find anyone who has cast a negative vote. The few opponents who have take note that it would cost $907,200 each year once the law is fully implemented. In addition, the opponents know that it will take more than just attendance counselors; it also will require a substantial investment to improve education from top to bottom in order to reduce the dropout rate.

This study takes the graduating class of 1980-81 and looks at what happened over the twelve years concerning dropouts, from the time this class entered the first grade in 1969-70 until they graduated. The figures quoted were taken from the Annual Dropout report published by the Mississippi Department of Education.

This study makes two assumptions concerning the class of 1981. The first assumption will be that the class of '81 will be composed of the public school graduates and the sum total of all students identified as dropouts from the class over the previous twelve years. Table 1 indicates that the first assumption concerning the size of the class of 1981 will be 45,813 students. The Governor's Office of Planning and Policy revealed that for the 1981-82 first grade class, 5,349 students who were eligible did not even enroll in the first grade. However,

Table 1

Number of Dropouts Reported
by Year for the
Class of 1981

1969-70	Grade 1	1,296
1970-71	Grade 2	588
1971-72	Grade 3	455
1972-73	Grade 4	517
1973-74	Grade 5	576
1974-75	Grade 6	634
1975-76	Grade 7	1,529
1976-77	Grade 8	1,934
1977-78	Grade 9	3,302
1978-79	Grade 10	3,239
1979-80	Grade 11	2,392
1980-81	Grade 12	1,268
	Total Dropouts =	17,730 (38.7%)
	Total Graduates =	28,083 (61.3%)
	Total in Class of 1981 =	45,813

such figures will not be used in this study. It will also be assumed that "in and out" migration of people will equalize each other, although figures suggest that Mississippi has increased in population over the last decade. The dropout figures are often criticized since one student may be counted more than once. However, it is also possible for a student to quit school between years and never be counted as a dropout. Therefore, this study will simply use the results as reported.

The second assumption for the class of '81 is that the actual class size is represented by the first grade enrollment in 1969-70, 54,619. One can note that even including private school graduates in the figures, the second assumption moves the dropout rate from 38.7% to 42.8%. In addition, even counting dropouts, there are 5,665 students total unaccounted for. It is true some students may have been retained and graduated later; there is no reason to assume the class of '81 would suffer from this problem to a greater degree than previous classes.

Now, looking at the first assumption for the class of '81 in Table 1, it can be seen that 17,730 or 38.7% of the potential 45,813 students of the class of 1981 were identified as dropouts. The College Entrance Examination Board in 1980 reported that the national dropout rate was approximately 10%. If Mississippi had been at the national dropout average, only 4,582 or 13,148 less students would have dropped out during the twelve years.

There are many studies which cite crime statistics, welfare recipients, health costs, and many other government expenditures for services which are directly related to a lack of education on the part of citizens. However, this study will not seek to calculate the earlier mentioned government cost. The only figures which will be used will be the projected earnings for students. The earnings figures will be based on census data for Mississippi; and, it will be assumed that no students will receive a college education and, thus, will not earn higher incomes.

Census data use five categories of dropouts for calculating earning potential as shown in Table 2. Since the 1980 census figures were not ready when this report was prepared, the 1970 figures were used and then an adjustment in the mean income for Mississippi according to the 1980 data was made. Table 3 provides the anticipated earning power of students in the class of 1981 according to their levels of educational attainment.

By combining the dropout data in Table 1 with the earning potential of students in Table 4, earning potentials could be calculated by year and for the lifetime for one person and for the total class of 1981. These calculations of earning power, given in Table 5, will be used as an estimate of productivity. As can be seen, by lowering the dropout level to 10% and thereby receiving the increased productivity from the students, the average person's salary would increase only $2,000 per year or $100,000 in their lifetime. This increased productivity would mean more than a $90,000,000 increase in annual earnings by the class each year and more than $4,000,000,000 in earnings over the working life of the class.

Table 6 provides similar economic productivity data as were presented in Table 5; however, it includes the second assumption of class size. As can be seen, under the second assumption, the per person figures do not change; however, the total figures do change since the second assumption represents more students. Even for the current dropout level, the second assumption of class size will yield over $107,000,000 in increased earnings each year for the class. Over the lifetime of the class, the second assumption would increase earnings over 5 billion dollars.

Now that basic productivity has been calculated, the study finally addresses its purpose: "What increases in revenue could the State of Mississippi expect from reducing the dropout level?" The study will look at the current dropout

Table 2

Graduates as a Percentage of
First Grade Enrollment for
the Class of 1981

Live Births, 1963	57,316
First Grade Enrollment, 1969-70 (Fall -- Public Schools)	54,619
Private School Graduates, 1980-81	3,141
Public School Graduates, 1980-81	28,083
Total Graduates, 1980-81	31,224
Difference in Number of First Grade Students and Total Graduates	23,395
Amount of First Grade Enrollment Not Graduating	42.8%
Students Not Accounted for as Either Graduates or Dropouts from First Grade (1969-70)	5,665

Table 3

Anticipated Earning Power of People
Based on Age Level and
Educational Level

Age Groups	Level of Education				
	Less than 5 yrs.	5-7 yrs.	8 yrs.	High School 1-3 yrs.	High School Graduates
18-24	$3,755	$4,411	$5,189	$ 5,161	$ 6,492
25-34	$5,351	$6,673	$7,716	$ 9,460	$12,458
35-44	$5,618	$7,218	$8,890	$11,084	$14,310
45-54	$4,988	$6,651	$8,735	$10,804	$15,019
55-64	$4,184	$5,711	$7,115	$ 9,036	$13,423
65	$2,839	$3,463	$4,099	$5,121	$ 8,282

Table 4

Estimated Productivity for Students
in the Class of 1981 by
Educational Level

Groups by Educational Level	Number of Students	Average Productivity		Total Productivity	
		Per Person Per Year	Per Person, Lifetime	Per Group Per Year	Per Group, Lifetime
Less than 5 yrs.	3,432	$ 4,905	$230,535	$ 16,833,887	$ 791,192,688
5-7 yrs.	4,097	$ 6,980	$328,060	$ 28,595,055	$ 1,343,967,589
8 yrs.	3,302	$ 6,550	$401,850	$ 28,233,716	$ 1,326,984,646
High School -- 1-3 yrs.	6,899	$10,450	$491,150	$ 72,908,513	$ 3,388,638,123
High School -- Graduates	28,083	$14,543	$683,521	$408,406,886	$19,195,123,660
TOTAL CLASS	45,813	$12,114	$569,358	$554,978,057	$26,045,898,710

Table 5

Comparison of Productivity Estimates by Three Dropout Level Assumptions for the Class of 1981 (Using Public School Dropout Figures)

Variables	Current Dropout Level	10% Dropout Level	All High School Graduates
Number of Students Graduating	28,083	41,231	45,813
Average Productivity --Per Person Per Year	$ 12,114	$ 14,134	$ 14,543
Average Productivity --Per Person, Lifetime	$ 569,358	$ 664,281	$ 683,521
Average Productivity -- Class Per Year	$ 554,978,057	$ 647,504,330	$ 666,258,460
Average Productivity --Class, Lifetime	$26,045,898,710	$30,432,703,650	$31,314,[illegible]7,570

Table 6

Comparison of Productivity Estimates by Three Dropout Level Assumptions for the Class of 1981 (Using Differences in First Grade Enrollment and High School Graduates)

Variables	Current Dropout Level	10% Dropout Level	All High School Graduates
Number of Students Graduating	31,224	49,157	54,619
Average Productivity --Per Person Per Year	$ 12,114	$ 14,134	$ 14,543
Average Productivity --Per Person, Lifetime	$ 569,358	$ 664,281	$ 683,521
Average Productivity --Class Per Year	$ 661,654,566	$ 771,984,946	$ 794,324,117
Average Productivity --Class, Lifetime	$31,097,764,600	$36,283,292,460	$37,333,233,500

level, a 10% dropout level, and a full graduation condition. The study will also report data under the two assumptions of the size of the class of '81. When working with the second assumption for the size of the class of '81 (using the 1st grade enrollment in 1969-70), the per capita figures given in Table 4 were used since there were no data to identify when or at what grade level the additional 5,665 students dropped out of school. The assumption is that for either assumption for class size, the patterns of dropouts would be the same.

Being conservative, it will be assumed that the only taxes to be affected by the increased productivity will be sales tax and income tax. The Mississippi Bureau of Economic Research estimates that 50% of a person's income is spent in retail sales and, thus, is subject to sales tax. The state tax regulations were used to calculate income tax revenues for the report.

Table 7 provides the estimated incomes to the state in taxes (sales and income) by the three groups of dropouts presented in Table 5. The data in Table 7 are using the first assumption of class size. As can be seen, if the dropout rate were dropped to 10%, the state should realize over a $5.7 million increase in taxes each year or over $268 million during the working lifetime of one class.

It is also interesting to note from both Tables 7 and 8 that the state would receive a greater boost to tax income by reducing the dropout rate from its current level to 10% than it would be reducing the rate from 10% to no dropouts. Given the poor condition of Mississippi's economy and the dire need for better-educated people in the workforce, such an investment in education would appear to be economically sound.

The governor's proposed compulsory attendance program is estimated to cost $907,200 when fully implemented for all twelve grades. Therefore, it seems tenable to state that the cost per class for implementing the law would be $907,200. If the program could bring Mississippi's dropout rate to 10%, then each graduating class would return approximately $5 million in increased tax

Table 7

Income in Taxes by Three Dropout Level Assumptions for the Class of 1981 (Using Public School Dropout Figures)

Variables	Current Dropout Level	10% Dropout Level	All High School Graduates
Sales Tax Per Year	$ 13,854,201	$ 16,187,608 ($2,333,407)*	$ 16,656,461 ($468,853)**
Sales Tax, Lifetime	$651,147,470	$ 760,817,590 ($109,670,120)*	$ 782,853,690 ($22,036,100)**
Income Tax Per Year	$6,086,351	$ 8,541,739 (2,455,388)*	$ 9,162,600 ($620,861)**
Income Tax, Lifetime	$286,058,474	$ 401,461,733 ($115,403,259)*	$ 430,642,200 ($29,180,467)**
Total Tax Per Year	$ 19,940,552	$ 24,729,347 ($4,788,795)*	$ 25,819,061 ($1,089,714)**
Total Tax, Lifetime	$937,205,944	$1,162,279,323 ($225,073,379)*	$1,213,495,890 ($52,216,567)**

*Represents the difference in 10% Dropout Level and Current Dropout Level.

**Represents the difference in All High School Graduates and 10% Dropout Level.

Table 8

Income in Taxes by Three Dropout Level Assumptions for the Class of 1981 (Using Difference in First Grade Enrollment and High School Graduates)

Variables	Current Dropout Level	10% Dropout Level	All High School Graduates
Sales Tax Per Year	$ 16,517,203	$ 19,299,128 ($2,781,925)*	$ 19,858,102 ($558,794)**
Sales Tax, Lifetime	$ 776,308,524	$ 907,059,026 ($130,750,502)*	$ 903,330,811 ($26,271,785)**
Income Tax Per Year	$ 7,256,246	$ 10,183,599 ($2,927,353)*	$ 10,923,800 ($740,201)**
Income Tax, Lifetime	$ 341,043,569	$ 478,629,175 ($137,585,606)*	$ 513,418,600 ($34,789,425)**
Total Tax Per Year	$ 23,773,449	$ 29,482,727 ($5,709,278)*	$ 30,781,902 ($1,299,175)**
Total Tax, Lifetime	$1,117,352,093	$1,385,688,201 ($268,336,108)*	$1,446,749,411 ($61,061,210)**

*Represents the difference in 10% Dropout Level and Current Dropout Level.

**Represents the difference in All High School Graduates and 10% Dropout Level.

revenue to the state each year or more than $225 million over their lifetime under the most conservative figures. There is little doubt that the actual return to the state in tax revenues would be much higher since the figures used in the calculations are extremely conservative.

Some people may argue that simply implementing the compulsory attendance law would not be enough to bring the dropout rate to 10%; it would require a change in philosophy and a great deal of money invested to strengthen the system of public education. One must consider the proposition, "How much should the state be willing to invest in public education to receive an annual return (when fully implemented) of over $225 million in increased taxes?" If the state invested $150 million a year into the new program, a sum which would place teacher salaries at the southeastern average and make major strides forward in program improvement, the state would still stand to gain a 67% return on its investment when fully implemented.

This study was not intended to accurately reflect all the economic benefits that the state of Mississippi could receive by reducing the dropout rate, but rather to give a most conservative picture of the economic impact. This study also did not imply that by simply increasing funding to public schools, all problems would go away. There is no doubt that new funds must accompany new programs which are well conceived and adequately monitored. However, there should be little doubt that a serious investment of capita in education in Mississippi stands to provide tremendous returns to the state in future taxes, thus providing the revenue necessary to do the many things that citizens feel government should do.

Therefore, the initial investment of the state in a compulsory attendance program that is supported with new programs to strengthen public education in Mississippi is an economically sound idea.

Executive Summary

The revenue a state spends on needed programs is raised through taxes. A primary factor in the amount of taxes received is the income level or productivity of the citizens. No one factor is more closely associated with a person's income than their level of education. Mississippi, with the worst dropout rate in the nation, is creating a potentially lifelong problem of underproductive citizens which will impact the entire economy.

Many studies have reported the large percentage of dropouts in Mississippi, but this study sought to translate the dropout figures into not only potential personal income, but potential revenue to the state in increased taxes. The study followed the graduating class of 1980-81 for twelve years and used two assumptions of class size. The more conservative assumption which took all the identified dropouts plus the public school graduates of 1980-81 for a class size of 45,813 with 17,730 dropouts for a 38.7% dropout rate. The more liberal assumption used the enrollment of first grade students in 1969-70 and considered the total public and private school graduates for a class size of 54,619 with 23,395 dropouts for a 42.8% dropout rate.

The study used only per capita income figures for Mississippi and made no assumptions that the increased number of high school graduates would, in turn, increase the number of college graduates. No cost figures were made for crime, welfare, unemployment, and health care which are closely tied to a lower level of education among citizens. In addition, the only tax revenues which were considered in the study were income and sales. Therefore, the results reported in this study are very conservative.

If the dropout rate for the 1981 class had been 10% instead of 42%, the state would realize an average annual increase of $5.7 million from income and sale tax as a result of increased earning power of students. Over the lifetime of the class of 1981, the increased revenue from the two tax sources would be

over $268 million. Even using the more conservative dropout figures the increased revenues would be $4.7 million per year or $225 million over the lifetime of the class. Therefore, if Mississippi had a population with only 10% who were not high school graduates, the annual return to the state in increased taxes could conservatively be figured at $225 million each year.

No doubt simply passing a strong compulsory education law at an annual cost of $1,000,000 a year will not automatically lead to a better educated public, but is is a logical starting point. Even if the state had to invest $150 million a year (new money) into public education to strengthen and improve the system, it would yield the state a 67% return on its investment. Money alone cannot improve public education, but without money few if any changes can be made.

Some would argue that dropout data are not accurate, but they are as accurate as the dropout data for other states, which means we are still in last place. Others would argue that more education does not automatically translate into higher incomes, but for years an increased level of education has been the one factor most highly correlated with income. Finally, some would argue that dropouts only injure themselves and questions of education should be left to the parents. Unfortunately, the dropouts continue not only to fail to contribute to our economy, but also to cost society millions in prisons, welfare, and unemployment.

In summary, you have a choice of "you can pay me now or pay me later." Public education is a key to our economic future and a valuable investment for our legislature.